

MILLS (C.K.)

al

---

# MULTIPLE NEURITIS AND SOME OF ITS COMPLICATIONS.

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

✓  
BY CHARLES K. MILLS, M.D.,

Neurologist to the Philadelphia Hospital; Professor of ~~Diseases of the Mind and Nervous System~~ at the  
Philadelphia Polyclinic; Clinical Professor of Nervous Diseases in the Woman's Medical  
College of Philadelphia.

---

REPRINTED FROM THE INTERNATIONAL MEDICAL MAGAZINE, FEBRUARY, 1892.

---





---

# MULTIPLE NEURITIS

## AND SOME OF ITS COMPLICATIONS.

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

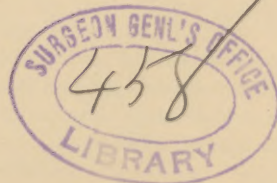
BY CHARLES K. MILLS, M.D.,

Neurologist to the Philadelphia Hospital; Professor of Diseases of the Mind and Nervous System at the Philadelphia Polyclinic; Clinical Professor of Nervous Diseases in the Woman's Medical College of Philadelphia.

---

REPRINTED FROM THE INTERNATIONAL MEDICAL MAGAZINE, FEBRUARY, 1892.

---







# MULTIPLE NEURITIS

AND

## SOME OF ITS COMPLICATIONS.

---

MANY cases of the kind that you will see at this lecture come or are brought to this hospital. A dozen years ago, shortly after I became connected with the hospital, the late Dr. J. L. Ludlow, who was for forty years a member of the staff, said to me that I would find many of my patients suffering from "rum pains." He went on to tell me that for years, in the hospital and outside of it, he had observed that patients addicted to alcohol were often the victims of pains and aches, few or many, isolated or diffused, and located in different parts of the body, but especially in the limbs. His observations were made years before the study of *multiple neuritis*, to which your attention will be directed this morning, had attracted particular attention.

With the aid of illustrative cases, I will develop before you some of the characteristic features of this disease, and will discuss some of its counterfeits and complications, concluding with a few practical points on its diagnosis, prognosis, and treatment. With the help of my resident physician, Dr. Taylor, I have prepared notes of the various cases to be presented, and I will use these notes, but will also in your presence examine and question the patients.

### ACUTE MULTIPLE NEURITIS OF MILD TYPE.

CASE I.—A. F., a middle-aged woman, had rheumatism when seven years old, and a second attack five years ago, for which she was treated in the Pennsylvania Hospital; her hands and feet were then much swollen, but she made a good recovery. She denies syphilis. For five weeks before admission to the hospital she had been drinking, and two days before, while intoxicated, she had slept out all night in a yard. When she awoke she had pain and loss of power from the knees down; both pain and palsy increased, and she was brought to the hospital by the police patrol. She was partly paralyzed in both lower extremities, being able only to half flex the thighs on the pelvis, and the legs on the thighs; she had double foot-drop, but not marked. She could barely turn the feet upward and inward by anterior tibial action, and abduction of the foot either alone or with dorsal flexion was impossible, but extension of the toes and elevation of the heel could be performed very imperfectly. Above the knees slight loss of power was about uniformly distributed in the various groups

of muscles. Pain on standing was present in all the nerve-trunks of the lower extremities; it was marked, but not intense. Lateral squeezing of the foot gave considerable pain. Knee-jerk and muscle-jerk were lost on both sides. Sensation was found to be impaired below the patella and on the inner aspect of the leg. She was hypersensitive on the soles of the feet. Farado-contractility was lost in the peroneal groups, with degeneration reaction to galvanism. The bladder and bowels were unaffected. Her mental condition was one of dulness, forgetfulness, and emotionality, with a tendency both to delirium and to somnolent attacks.

This is the brief record of her condition when admitted, about seven or eight days ago; it has not much changed, but, if at all, for the better.

Let us summarize, examining her in your presence, and stopping now and then to discuss some special feature. Remember that for five weeks before admission she had been drinking, and that two days before she had slept out of doors; alcohol and exposure are both, therefore, etiological factors. Observe that she can use her arms, but shows slight weakness in extending the hands. Observe also the double foot-drop, —or foot-droop, I should perhaps say, in this case. (Fig. 1.) That position is less marked than it was a week since. It is only slightly abnormal, but enough to indicate the peculiarity of the paralysis from which the patient suffers. You have here also a scarcely-demonstrable hand-drop. Fortunately for her, she is improving, and you can see that she can now draw the leg up some distance without much difficulty. She has considerable power in the thigh-flexors, yet you will notice the manner in which she moves her limbs, showing that the muscular power is moderate and that the movements cause some pain. She cannot bend her feet outward or upward fairly and fully. The examination develops the fact that she has a generalized paraparesis, —that is, partial loss of power everywhere in the lower extremities, but much more marked in the muscles below the knee, and most decided in the dorsal flexors and abductors of the feet,—and that she has considerably improved in the short time that has passed since admission.

You observe the diminished plantar reflex as I tickle and prick her soles. The knee-jerk is not well shown with the patient lying down, but when now she sits up we can test it better, and you also get a better idea of the peculiar position which her feet assume. The test shows—as when admitted—that the knee-jerk is entirely abolished, a fact which also indicates the importance of the examination. Remember that this case of disease is only two weeks old; and one reason that I have brought her before you is because the case is recent, and yet, recent as it is, she has neither knee-jerk nor muscle-jerk. Testing her for sensation, we find that this is diminished in irregular areas. To make this test thoroughly would take at least the entire hour. She has an irregularly-distributed impairment of sensation, to determine which you must examine her limbs everywhere for sensation, as has been done in the ward. Investigations of sensory disturbance are often uncertain and indeterminate. The personal equation—the receptive and registering ability of individuals—differs. Nerves in normal individuals may transmit sensations differently as to time, and patients vary so much that it sometimes takes much hard work to determine the distribution and degree of loss of sensation.

This patient's mental condition is now fairly good. I examined her a week ago, and she was then at times in a state of almost active delirium, one in which her mind wandered a little and in which she exhibited uncertainty and hesitation in her answers. Her mental processes were somewhat obtunded, but under treatment she has improved in this as in other respects.



Before I say anything further about this case, however, I will show you another, a woman who, instead of having been in the hospital for a few days, has been here eight months.

If a victim of the same disease, we will have for study a case of the same character but older and of a more severe type.

#### MULTIPLE NEURITIS OF MODERATE SEVERITY.

CASE II.—M. W., aged twenty-eight, claims always to have been a healthy woman, except that she has a history of measles in childhood and of pleurisy when twenty-three years old. She denies drinking, but this denial is more than doubtful. When the present attack began she was out at service, and was in the habit of going out into the yard with bare feet and wet skirts. Eight months ago she began to have pains in the knees and in the legs from the knees to the toes, worse in the left leg. She had no pain above the knees nor in the back. Both hands were numb and uncomfortable from the second phalangeal joints to the tips of the fingers, but no discomfort was experienced in the rest of the upper limbs. This condition continued for about a month, the paræsthesia growing gradually worse. The sensation is described as resembling at first the feeling of the fingers "asleep," or of pins and needles. Later, the fingers became stiff, and she had sharp pains running down the leg. She was soon obliged to take to bed, because of loss of power in the lower extremities, which increased until she was not able to stand. She entered the hospital three months after her first symptoms, and at that time was still in much pain. As nearly as can be learned, most of the pain left her under treatment three months after entering. From the beginning of the attack she had not only subjective pain, but also hyperæsthesia and tenderness over all parts of the affected limbs, which persisted markedly after her entrance into the hospital, but gradually decreased. At present she states that her feet and legs feel cold, and she has a numbness of the dorsum of the foot, particularly on the left side.

Her history, then, in brief, is that of a healthy Irishwoman, probably using alcohol, and exposed to wet, suddenly taken with pains in both her lower extremities, and this accompanied by swelling in both ankles. She was then paralyzed and had great pain. Later, you find her somewhat improved,—a decided improvement in the paralysis. You see her limbs are not much atrophied. The power to move her feet has improved, although they show a tendency to dropping. She has far from full control, although she can twist her feet in different directions. She can turn them downward better than upward. She has the same disease as the other woman, in a more severe and more chronic and persisting form.

That some active inflammation is still present I can readily show you. I now have the popliteal nerve, and the moment I roll it under my finger she has great pain. When I take her foot and squeeze it laterally, as in the other case, she has great pain. Finally, this patient has, and indeed both have, or have had, changes in the electrical reactions, but you will have to search for them. She has lost contractility in the anterior tibial and in one or two other muscles, to say the least.

Both of these patients are suffering from multiple neuritis, an inflammation affecting many nerves,—a disease which has been brought prominently before the profession during the last few years, although cases

of a similar kind were described seventy years ago. Great attention has been paid in journals and text-books to the disease during the last four or five years, but my experience teaches me that many practitioners are still unfamiliar with the subject. Cases in their early or acute stage are still often set down as myelitis of some form, and in later stages as posterior sclerosis or some other form of chronic spinal degeneration. Just now the nervous wards of this hospital afford me an unusual opportunity to bring before you cases both acute and chronic, both complicated and uncomplicated; and, of course, we have also in large number, for contrast, the spinal counterfeits of the affection. I will therefore devote the hour to a rapid presentation of these cases, with only brief comments, as they speak for themselves in a language which you cannot mistake. You will constantly meet with cases of multiple neuritis in your practice, especially in large cities, and sometimes these are so typical that you cannot be mistaken; but the greatest source of error in diagnosis will probably be from your lack of acquaintance with irregular types of the disorder, cases in which either cerebral or spinal complications, or both, exist, and lead you to overlook and misinterpret the coincident affection of the nerves. Remember, then, as I will illustrate by some of the cases this morning, that you may have spinal or cerebral inflammation, either of membranes or nerve-tissue, in association with the multiple neuritis, or that you may have the latter affection entirely independent of the central complications. Remember also that chronic sclerosis sometimes coincides with either acute or chronic neuritis, and that your skill in diagnosis and prognosis will be most put to the test in connection with these irregular and complicated forms of the disease. In the alcoholic cases particularly brain complications are usually present.

#### MULTIPLE NEURITIS OF SEVERE TYPE, WITH VERY SLOW RECOVERY.

CASE III.—This patient is twenty-nine years old, and has been a pretty hard drinker. He denies specific history or excessive use of tobacco. Three years ago, in August, he was "sunstruck;" at least, on a hot day, he fell down in the street unconscious and remained out of his senses for eight days. He had been drinking up to four hours before the "sunstroke," and previously had been in the habit of taking three or four drinks a day, and more on Saturdays. A few days after getting around he began to suffer from headache and pain in the calves of the legs; these pains continued, and he lost power below the knees. The paralysis spread to the thighs and then to the arms; it was accompanied with pain and great tenderness.

The patient says that for eight months he could not move at all. Such recovery of power as he has made has been exceedingly slow. He can now walk a short distance without crutches, with a peculiar loose movement of his knees and ankles. If he stops it is necessary to have some support. He can feel the floor under him per-



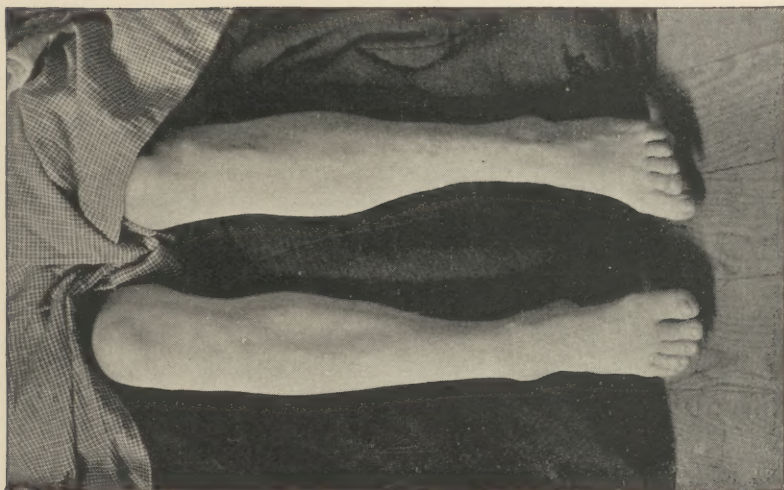


FIG. 1.—Multiple Neuritis. Position of feet and legs.

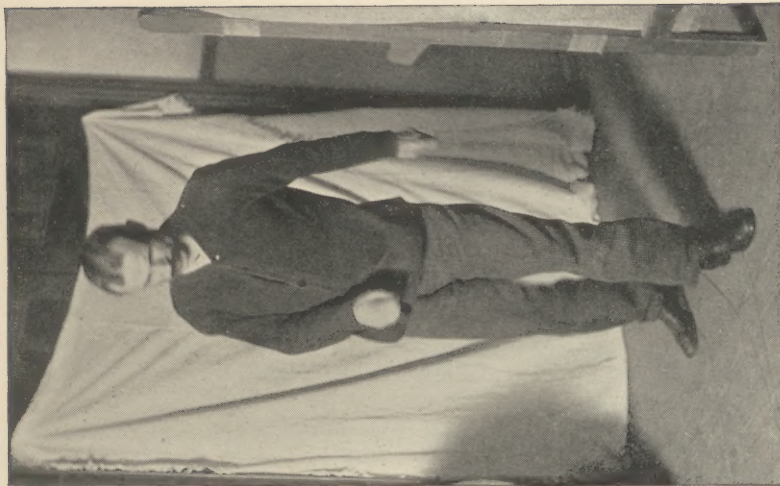
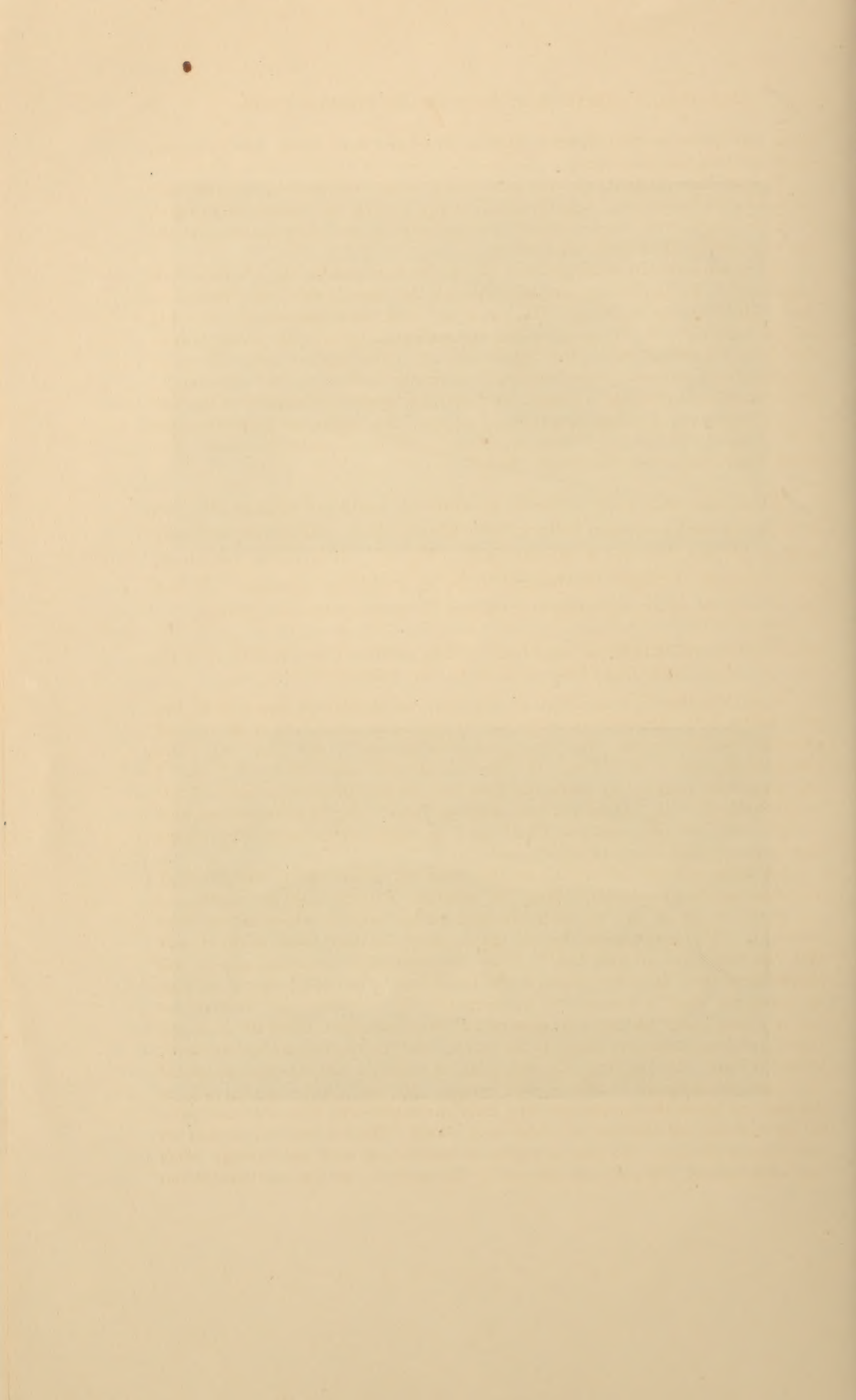


FIG. 2.—Multiple Neuritis. Gait of a patient recovering.





fectly, and appreciate the difference between carpet and hard wood. His knee-jerk, which was lost, has come back.

Most of these patients have been examined so many times for knee-jerk that they can answer for themselves. Like the chickens which, when the preacher came round, put their heads on the block, so when these patients see the doctor coming into the ward they put up their knees to be struck.

He is not markedly emaciated, but his face is thin and he has a sallow, dark complexion. His pupils are unequal,—the left the larger,—but both respond to light. His tongue is tremulous. His hands are weak, the dynamometer registering only 25, right and left. They are wasted, the metatarsal bone being plainly visible. The deltoid is atrophied, but the trapezius is not. The legs are thin. Muscular irritability does not seem much impaired; percussion fails to produce contraction, and no fibrillary twitching is present. He still has slight tenderness over the posterior tibial nerve. The feet appear to be normal; the thighs are proportionately thin compared with the legs. Some muscles still show degeneration reactions. The bladder and rectum have never been affected.

Watch this man walk. For a long time he could not walk at all; but he now can walk,—even a little without his crutches. He is comparatively firm on his feet, but has a curious gait. (Fig. 2.) It is not a true ataxic gait, although it might be thought to be by a careless observer. It is a gait due to the marked paresis or paralysis in certain muscular groups.

#### MULTIPLE NEURITIS OF SEVERE TYPE COMING ON WITH ACUTE RHEUMATISM; VERY SLOW RECOVERY.

CASE IV.—Here is a man from Dr. Dercum's wards, who has been sick for two years and a half. He will now tell us how he was taken sick. First of all we must sometimes confess our sins. Q. "Are you a drinking man?" A. "Yes." Q. "Did you drink heavily?" A. "Yes." Q. "Tell me how you were taken sick." A. "I was taken with pain in my knees and then lost power. In about a month I was totally disabled." Q. "Have you been disabled since?" A. "I have not been able to walk since, now two years and a half, but I am beginning to use my legs. Some improvement began about six months since."

His more complete history is, that two years and a half ago he had an attack of inflammatory rheumatism lasting five months. For the first two months he was treated at home, and was then admitted to this hospital, where he has since remained. The patient states that all the joints of his body were involved, and that "he had pains all over him." When the joint-trouble subsided and he was convalescent from the acute attack, it was found that he had lost power in his legs. He could not stand a moment, his legs spreading out under him, and he could not feel anything under his feet. At first he had loss of sensation below the knee, but above the knee he was very tender to the touch; later, he also became hyperæsthetic below the knee. He had sharp, shooting pains through the calf-muscles and behind the knees, accompanied sometimes with cramps. He had also a wearying ache in the back and across the sacrum and hips, and was troubled with browaches and pains in the eyeballs and temples, but these have ceased. The left arm was affected the same way as the legs. He had no return of rheumatism until last January, when one wrist swelled; his pains are affected by the weather. He has continued to im-

prove, but only slowly. At present he has aching pains in the sacral region, and also in the legs and behind the knees; he has some tenderness over the posterior tibial region. He can feel the ground almost perfectly, a slight variation, however from normal remaining. He cannot stand alone, but feels as if something in his back drew him sharply backward.

This man was totally paralyzed; indeed, he is badly paralyzed yet. He falls sometimes when he endeavors to walk; he walks with great difficulty with crutches; supporting his body with great effort, and with much tremor, he makes out to walk without falling, but sways back and forth, and if he is not careful he will go down suddenly, as I have seen him fall in the ward. Perhaps he will not wholly recover.

He tells us that he had pain and swelling both in the joints and between the joints, and that the feet were swollen. His knee-jerk was abolished, but now on testing we get a pretty good, brisk jerk. That is an important point: the knee-jerk does return; when a man's knee-jerk is gone, it is not necessarily gone forever. I have seen case after case in which the knee-jerk was totally abolished, but in which it eventually returned. He has in a varying degree the same conditions as were shown to you in the other more recent cases. His legs were wasted, and are still to a considerable extent, and electrical changes have been present.

Both of these cases, and the first in particular, teach us that we should be slow to give an absolutely unfavorable prognosis in even the severest cases of multiple neuritis. The first patient has been paralyzed, unable to work, and physically and financially a useless member of the community for three years; the second, for nearly this time. The first of the cases, at least, may, I think, in time make a complete recovery, although this desirable consummation may not be reached for a year or two more. Recovery in the second case is doubtful, but is not impossible. When it is considered what a myriad of nerves were involved in the inflammation and subsequent degeneration, it is not at all remarkable that the progress towards recovery is so slow. Encouragement and treatment should not be discontinued too soon. Massage, Swedish movements,—passive, active, and duplicated,—galvanic electricity, strychnine by the mouth and hypodermically, stimulating douches and baths, should be perseveringly used in these cases, although it is well at times to stop treatment for two or three weeks in order to guard against overdriving the reviving and renewing tissues. In spite of all treatment, in some instances the neuritis has been so destructive that the nerves have been practically wiped out, and nothing is left as a basis for regenerative treatment.

#### MULTIPLE NEURITIS AND POSTERIOR SCLEROSIS, BOTH DEVELOPED ACUTELY; RECOVERY FROM THE NEURITIS AND PERSISTENCE OF THE SCLEROSIS.

CASE V.—This man came to the hospital more than two years ago, and has therefore been under my eyes for a long time, and I know much of his history from observation. He was a huckster, and, after the manner of hucksters, was much ex-



posed to bad whiskey and bad weather. One day he partially lost power in one of his legs; still, he was able to go on with his work; in a day or two afterwards he lost some power in his other leg. He managed to drag himself to this hospital, and was in my wards two years and four months ago. For three days his suffering was moderate, when suddenly it was enormously increased. I remember, as if it were yesterday, coming into the ward and seeing this man, his face a picture of pain and distress, his limbs drawn up, and shrinking and crying out at the slightest handling of skin, muscles, or joints. For days we could not handle his legs, and it was six or seven weeks before the pain had greatly subsided, but after this had taken place, I examined him again, and found the symptoms of posterior spinal sclerosis. Instead of improving, as the other patients, he has lost and continues to lose ground. He now cannot keep his feet without crutches, and can scarcely do so with them.

Let me question him. Q. "Do you still have pains?" A. "Yes, sir." Q. "How often?" A. "Frequently." Q. "What are they like?" A. "They are sharp pains running like a knife through me." Q. "Do these pains come and go?" A. "Yes." Q. "How long do the attacks of pain last?" A. "They may last for a minute, or an hour or more when there is great pain. Darting pains pass through me almost enough to take me out of the chair."

This man has no knee-jerk, and never will have, I am afraid. He has great disorder of co-ordination, and suffers, as just described, with extreme lancinating pains.

Testing for sensation, it is found that retardation for touch is present. It requires four seconds by the watch before he can recognize a touch on the foot. With hot and with cold water, and with sharp points, he also shows retardation; in brief, he has the sense of touch, pain, and temperature, but all these sensations are retarded in somewhat varying degrees; the most for touch, the next for pain, and the least for temperature.

He has also involuntary clonic spasms, which are hard to explain. While I am examining him with my hand beneath the thigh, I can feel the flexor muscles contracting, and his leg begins to jerk and flop. In the last two years he has developed tubercular disease, and he may have incipient tubercular disease of the spine combined with some pachymeningeal trouble. It is a curiously complex case. You will rarely find a case actually attacked with acute multiple neuritis and acute posterior sclerosis at the same time. The multiple neuritis got well and the posterior sclerosis remains. He has now genuine locomotor ataxia. He has also some pain and tenderness on moving his trunk, and may have complicating osteitis, caries, or pachymeningitis.

For the past year or two he has had a cough, which has gradually grown worse, and is accompanied with sharp pains in the side. His weight is much reduced.

This patient brings to our minds the question of the various relationships between posterior sclerosis and neuritis, whether multiple, diffuse, or localized. At present the case is one of confirmed locomotor ataxia, due to persisting spinal lesion, according to our most positive canons of diagnosis; and, certain as I am of this diagnosis, I am just as sure that at the onset he had typical symptoms of multiple neuritis, probably associated with myositis. Multiple neuritis and posterior sclerosis both developing at the same time acutely and in the same case is not a common combination of

these diseases. Leyden, a pioneer in the study of multiple neuritis, has, among others, paid close attention to the relationships which exist between locomotor ataxia and true multiple neuritis. It is now well known to all experienced neurologists that in many cases of genuine locomotor ataxia the peripheral nerves, as well as the spinal cord, are degenerated, and it has indeed been held that most cases of locomotor ataxia have a peripheral origin, the cord becoming affected comparatively late. It is, at any rate, quite certain that neuritis more or less diffused is frequently present in cases of ataxia. Many of the complicating symptoms of the ataxia—sensory, trophic, motor, and visceral—may depend upon the concurrent neuritis. The muscular atrophies which in a fair percentage of cases are present, and which I have seen a number of times in the wards of this hospital, according to Déjerine, are the result not of extension of the disease to the anterior horns, but rather of a degenerative neuritis particularly attacking the intramuscular nerves.

The patient, however, is not brought before you because his case is illustrative of any of these recorded relations, but because it shows an association of the most wide-spread character between the two diseases at their onset and in their acute stages, and because, also, it exhibits the persistence of the spinal affection after the subsidence of the acute symptoms. I do not recall any record of such an association of phenomena. This patient as you now see him is not a case of pseudo-tabes, but he has all the distinctive marks of a genuine chronic posterior spinal sclerosis, with probably some added meningeal or bone disease.

This term, pseudo-tabes, has been usually applied to cases of multiple neuritis in which the patients retain their feet and show considerable incoordination with some loss of power. Occasionally such cases very closely simulate posterior spinal sclerosis, and I have examined several in consultation, in which for a longer or shorter time they had been supposed to be genuine locomotor ataxia. In two such cases seen by me recently an exceedingly grave prognosis was given, but both have recovered and are now engaged at their ordinary vocations. Under the head of pseudo-tabes, however, still other cases have been reported in which no organic changes either in the spinal cord or in the spinal nerves or nerve-roots have been present,—neurasthenic or hysterical disorders in which the phenomena closely resemble those of either form of multiple neuritis or of spinal ataxia.

This case, again, is of interest simply because of its acute onset, independently of the question of the early concurrence of the disease with typical multiple neuritis. It is so well known as to be scarcely worthy of repetition that locomotor ataxia due to posterior sclerosis usually comes on



slowly and often insidiously, the first stage of the disease in some instances even lasting for many years. It is by no means so well known that the disease may develop acutely, in a few weeks or possibly in a few days, originating sometimes almost explosively. The occasional abrupt appearance of sclerosis has been compared by some one—I think it was Wilks—to the sudden occurrence of some eruptive diseases, nodules, or areas, or tracts of sclerosis erupting in various parts of the cerebro-spinal system. I have known a few cases of posterior and of disseminated sclerosis to come on suddenly or with great rapidity. The next case I will show you is one in which apparently a fully-fledged ataxia grew to maturity in the short space of six weeks; but, as my time is limited, I will simply dwell on the case sufficiently to develop the proofs of its true sclerotic nature and the history of its rapid origination.

#### ACUTE POSTERIOR SCLEROSIS, WITH DOUBTFUL MULTIPLE NEURITIS AT THE ONSET.

CASE VI.—J. M., aged forty-seven, is a laborer whose mother died of phthisis. Ten years ago he had “malaria” and right-sided pleurisy, which, he states, have returned whenever he has had a cold. He has suffered with an occasional cough, and his sputa have been sometimes streaked with blood. He had gonorrhœa fifteen years ago. Six weeks before admission to the hospital he began to have shooting pains in his thighs from his hips down, and also from his knees down, as if pins and needles were sticking in them, and in a day or two girdling pains around his body. The pains in his legs were worse in the mornings, and after he had walked around awhile they would pass away. When he was washing himself, if he shut his eyes he would feel giddy and nearly fall. His legs were somewhat sensitive to touch, and the soles of his feet felt numb. The knee-jerks were lost. The man insists that all these troubles came on suddenly after exposure.

Questioning this patient, I find that he was a drinking man, and it is possible that he at the start, like the last case shown, had some multiple neuritis combined with his acute cord-disease, but, from the statements I have obtained from him, the nerve symptoms were at least not prominent. The case is one in which either the whole disorder developed acutely or the early stage of it was practically latent before the period to which he attributes the abrupt beginning of the affection. He says that at times for many years he has had rheumatic aches or pains, but that these were never of a darting or shooting character. As he describes them, they would seem to have been more like the pains of a coming-and-going neuritis due to rheumatism or alcohol.

Putzel<sup>1</sup> has published a short communication on the pathological anatomy of acute locomotor ataxia, recording briefly a case which came under his observation. The post-mortem examination revealed exquisite sclerosis of the posterior columns throughout their entire extent, and what

---

<sup>1</sup> Journal of Nervous and Mental Diseases, April, 1885.

seemed to be a multiple sclerosis in various other parts of the cord, the gray matter, however, appearing entirely normal. In commenting on this case, he says that, if we take into consideration both the histological appearances and the clinical history,—the latter that of rapid loss of power and the acute onset of the ataxia, with the subsequent disappearance of the paralysis,—he believes we are justified in concluding that the disease was primarily a diffuse myelitis, and that this inflammation cleared up in great measure in all other parts of the cord except the posterior columns, in which it not only remained but advanced. Vulpian, who is cited by Putzel, mentions that ataxia is sometimes secondary to other diseases of the cord, as Pott's disease or compression of the cord from other causes, chronic spinal meningitis, meningomyelitis, chronic pachymeningitis, descending secondary lateral leucomyelitis, etc.

Having given instances of uncomplicated or nearly pure multiple neuritis, and also of the same affection complicated with disease of the spinal cord, and having discussed the methods in which the nerve- and the cord-disease interblend, I can appropriately close the lecture by showing you a case in which multiple neuritis has been complicated with marked cerebral disturbance. While the differentiation of diseases of the nervous system according to the various portions of the cerebro-spinal axis attacked is an important advance in practical medicine, it is equally important, as I stated early in the lecture, that we should have clear ideas as to the tendency to a concurrence of disease in two or more portions of the nervous system. All diseases produced by artificial toxic agents or by the toxic influence of infectious diseases—affections, in other words, due to such agents as alcohol, arsenic, lead, mercury, or following such diseases as syphilis, diphtheria, scarlet fever, measles, whooping-cough, etc.—may have inflammatory lesions anywhere and everywhere in the nervous system,—in the brain or in the spinal cord or in their membranes, in the cranial or spinal nerves or in their sheaths, and in the nerves or ganglia of the vaso-motor or so-called sympathetic system. The poisons are protoplasmic, and one, or many, or any part of the nervous system, and indeed any organs or tissues in varying degree, may be assaulted in a ratio dependent upon the activity of the virus and conditions of predisposition. Looked at in this comprehensive way, the various complications and combinations of affections such as we are considering to-day are easily understood. Given, for example, a history of alcohol, and a complex of symptoms referable to intracranial, intraspinal, or peripheral lesions, we need not be confused in our efforts at diagnosis and treatment because the cases do not present typical pictures according to text-book classifications.

The cerebral disturbances which accompany cases of multiple neuritis



may be of the mildest or gravest character or of any degree of gravity. Not a few such cases have a fatal issue; some make partial recoveries; others recover entirely. These cases have been described under a variety of names, such as alcoholic paralysis, or alcoholic delirium, or alcoholic insanity, and many such cases have been described, particularly during the last few years. The only case of this kind which I have the opportunity to exhibit in the present lecture is one which differs somewhat from most of those which have been detailed in that the man has had, in association with some general sensory and paralytic symptoms due to nerve-inflammation, a partial hemiplegia, from which he nearly recovered, and which was in all probability the result of a local congestive or hemorrhagic lesion of the brain.

#### MULTIPLE NEURITIS WITH CEREBRAL COMPLICATIONS.

CASE VII.—This man, aged fifty-five, a carpenter, six months ago got very wet. He had not been drinking for two weeks previous, but prior to this period he had been taking from five to ten drinks a day with little food. He felt great pain across the sacrum and hips, which increased, but in the night, after getting warm in bed, the pain eased a little, and in the morning he was worse again, so as to be disabled. The pain continued for five or six days, diffusing downward to the calves and feet; it was wearing, but not sharp. The diagnosis of rheumatism was at first made. He grew rapidly worse, became feverish, and was put to bed and kept there four or five weeks; at times he was delirious. When convalescing it was noticed that his mouth was twisted to the left side. He had had a slight stroke of paralysis on the right side; the right leg was most affected. It was three or four months before he recovered the partial use of this leg. For a long time after this he felt sore in the back of the head and also had numbness in both hands. At present, as I show you, his right foot has not as much power as the left, and the toes cannot be moved as on the other side. On the dorsum of the right foot is an area insensible to pain; on the soles of both feet near the toes sensation to pain is a little diminished. Knee-jerk is diminished on both sides, but especially the right. He has stinging and burning pains in the feet, also soreness in the thighs. He cannot sit on anything hard unless he can touch the floor and lift his thighs. He cannot cross the knees on account of pain, and has sharp pain on squeezing the right foot.

This man's history is that he took ale and beer with his lunch and as the main part of his lunch, a not uncommon story for Blockley patients suffering from neuritis. This is one of the ways of developing this disease. You will find men and women who almost live on beer and whiskey. It is said that multiple neuritis is not very common among beer-drinkers, but I know that beer, champagne, or whiskey will produce multiple neuritis. Among beer-drinking women I have seen a number of cases of multiple neuritis. I remember one woman who got nearly well, and then sent out for a pitcher of beer and commenced drinking again. Soon the old symptoms redeveloped, with the addition of serious brain-symptoms, and she died.

If such cases are not watched they will kill themselves by relapsing into their former habits just as they are getting well.

The commoner type of combined multiple neuritis and cerebral alcoholic disease, as I have seen the combination, usually presents, when at its height, more or less complete paralysis of the extremities, with great hyperæsthesia, irregular anæsthesia, changes in the appearance of the skin, absent knee-jerk, and marked excitement, or the opposite condition of apathy, with strange delusions, which may be hallucinatory, illusional, or notional; and cases of this type seem to die or recover in almost equal numbers, although the chances, if the patients are well managed, are in favor of recovery.

Not long since I was called out of the city to see such a patient, a young lawyer, who had led both a hard-working and a fast life. He was addicted to sexual excesses, and was a steady and occasionally an excessive drinker. After a debauch he had diplopia, unilateral ptosis, marked tremor of the hands, and a staggering gait, with at first a little delirium of a muttering kind and some delusions of exaltation. His breath was offensive, his tongue coated, and his bowels constipated; but his pulse and temperature showed no particular increase or change. Inco-ordination in both the upper and lower extremities was very marked. He had extreme sensitiveness everywhere in the lower extremities; knee-jerk was absent, and in addition to the ataxic phenomena he had paresis in various muscular groups, particularly in the dorsal flexors of the feet. He was placed in bed, with attendants to care for him. His physical symptoms continued of pretty much the same character; but mentally he exhibited from time to time alternations of stuporous, apathetic, and excited states, with a constant current or undercurrent of hallucinations and delusions. Occasionally he showed a tendency to violence, but was easily controlled. He eventually recovered entirely.

The best method of treating cases of multiple neuritis is by no means always easy to decide. The treatment must differ somewhat according as the case is in an early, a middle, or a late stage. In the early stage, particularly of the severe cases, the treatment should be actively and aggressively anti-inflammatory and pain-relieving. The suffering of some of the patients affected with multiple neuritis is almost indescribable, and it is of the utmost importance to relieve this promptly, if possible. In the first place, the patient should be put as nearly as may be at absolute rest, in the full meaning of the word absolute. Attention should be paid to the character of the bed; it should not be too hard, and should be as free as possible from knots and ridges. Much the same care should be taken with patients of this kind as with cases of fracture; the handling and movement necessary in feeding the patient or in attending to his evacuations should be reduced to a minimum.

In nearly all cases the patient should at once be deprived entirely of

alcohol. Occasionally a measure so heroic as this might have some danger in old broken-down toppers, but in the majority of cases the alcohol should be withdrawn at once, and I have rarely seen any harm result from this procedure. If the use of any alcohol is retained, it will be best given in the form of a weak milk punch two or three times a day. While, however, the alcohol should be removed, the patient should be carefully nourished. In order to accomplish this, it will sometimes be particularly necessary to pay attention to the condition of the stomach.

In a few cases bloodletting may be of advantage. Before resorting to general venesection, however, the patient's general condition should be carefully considered. Many old alcoholics are badly broken down and would react badly from general bloodletting. A few cases, however, with sthenic symptoms, and with evidences of conditions of congestion or inflammation of the brain and spinal cord, in addition to the neuritis, can be advantageously treated by careful venesection,—those, for instance, like Cases V. and VI., in which symptoms of acute congestion or inflammation of the spinal cord were combined with multiple neuritis.

The pain and tenderness must be relieved, and to relieve these several things must receive attention. Various local applications have been recommended and may be tried. One difficulty is the large surfaces which must be covered,—entire limbs, and almost the entire body in some cases. Very hot fomentations or poultices can be applied to the limbs every two or three hours for ten or fifteen minutes at a time. Instead of these, rapidly-alternating applications of very hot and very cold water may be used, but care should be taken when these are resorted to not to be careless or slow. A large sponge or soft towel is dipped first in very hot and another in very cold water, and one is made to rapidly follow the other up and down the limb. If used properly, this makes an agreeable and useful method of local sedation or counter-irritation.

Opiates in various forms can be used for the relief of the pain. One of the best methods of administration is hypodermically, giving the one-sixth of a grain of morphine and the one-one-hundredth or one-one-hundred-and-twentieth of a grain of atropine. The hypodermic injection need not be given in the most hyperæsthetic areas. One, two, or three injections a day may sometimes be resorted to with advantage.

It is a good plan in the early stage to give an anodyne and a febrifuge,—as, a mixture containing morphine, with citrate of potassium, spirit of Mindererus, and camphor-water. If the patient has a weak heart and is broken down from alcohol or other cause, care must be taken in the administration of remedies. It is well, sometimes, in such cases to give good-sized doses of *nux vomica*, strychnine, erythroxyton, preparations of cinchona, or



digitalis. Nourishment in the form of milk, beef extracts, tender meats, and soft foods generally must certainly be given.

In the early stages particularly, and at any stage in which pain or hyperæsthesia is a prominent manifestation, salicylic acid, salicylate of sodium, or some other salicylate, salicin, salol, or oil of gaultheria,—all remedies, of course, of the same general character,—may be administered with great advantage; but which of these various preparations should be first selected it is somewhat difficult to say. My own preference is to begin with the salicylate of sodium, fifteen or twenty grains, repeated every four hours, or even oftener at first, watching the patient's condition and diminishing the dose if it appear to weaken him.

In some cases even thirty grains of the salicylate of sodium can be taken as often as four or five times a day, and will sometimes cause speedy relief of the most painful symptoms. In cases with a rheumatic element this treatment is one of the very best. Of the drugs allied to sodium salicylate, oil of gaultheria is next in value. It is wonderfully efficacious in relieving nerve-inflammation, but unfortunately, owing to its acrid properties, it sometimes disagrees with the stomach, and may prove very depressing, like all the salicylic preparations. It can be used in doses of from five to twenty minims. In severe cases of neuritis it is perhaps better to begin with doses of ten or fifteen minims, which may be administered in an emulsion so as to give a tablespoonful dose.

When cerebral symptoms are prominent, it will often be found advantageous to administer bromide of sodium, potassium, or lithium, or antipyrin or antifebrin, in addition to the salicylates or iodides, and to the use of opiates and local applications.

In cases with a syphilitic history I have found the best results from the conjoined use of inunctions of mercury and the internal administration of sodium iodide and sodium bromide in doses of from fifteen to twenty grains each. Malarial cases should be treated with large doses of quinine and arsenic, or the salicylate of quinia or of cinchonidia can be given with the most decided advantage. In lead cases chloride of ammonium and either the potassium or sodium iodide should be resorted to to assist in elimination. Cases due to mercury or arsenic are to be treated on general principles, eliminating or constitutional remedies not proving so serviceable. In lingering, chronic cases hypodermic injections of strychnine should be tried.

Baths, either simple warm or hot baths, or electrical or medicated, are useful in the subacute or chronic stage of multiple neuritis. These should be used as often as possible, but always carefully, not unduly exposing the patient in a cold room, or allowing the limb to grow cold or to remain too long wet. The baths may be either local or general,—that is, the feet or

a limb may be placed in the warm or hot water, or the whole body may be carefully immersed. Ordinary warm baths are best used at night, and will help the patient to sleep.

Massage and Swedish movements are remedies of value if used in the appropriate stages and in the correct way. It is not well to begin either too early or to wait too long. In the most acute stage, or in the most severe varieties of multiple neuritis, even the gentlest massage would be practically impossible. The patients can scarcely endure to be touched, let alone to have stroking, kneading, etc., employed. On the other hand, it is not advisable to wait until all pain and tenderness have disappeared. When the superficial tenderness and the extreme pain have subsided, massage should be begun. It should at first be of the gentlest character and only for a brief time; gradually both the thoroughness and the length of the treatment should be increased, until eventually massage in all its varieties—stroking, friction, kneading, and percussion—should be thoroughly employed over a period of at least an hour. It is in the stage of subacute or chronic neuritis, with progressing recovery from the true inflammatory condition, that the duration of the entire case can be largely modified by massage and galvanism.

It is sometimes an excellent plan to apply anodyne and resolvent ointments by means of massage. A good ointment to use for the relief of pain and for actual effect upon the neuritis is aconitia ointment, or aconitine made up with lanoline. Even small quantities of mercurial ointment or a mixture of mercurial and belladonna ointment may be used in this way. Morphine, atropine, hyoscine, etc., may be added to the oleates or to vaseline. Liniments made up with oil may be used during a whole or a part of the general massage; thus, sweet oil, cocoanut oil, etc., may be combined with tincture of aconite root, or chloroform or the oil of origanum may be used in some combination in a liniment.

If the patient stands it well or is improved by means of massage, either simple or medicated, in the course of two or three weeks, Swedish movements, at first of the passive and later either of the duplicated active or of the independent active variety, can be used. Just how far these may be employed with advantage can be told by a masseur or a masseuse of tact and experience. Returning movements are to be coaxed, the will is to be trained back into the muscles, contractures are to be carefully overcome,—in fact, the patient's unfolding neural and muscular powers are to be encouraged and helped onward. With massage, Swedish movements, and electricity, properly employed, the length of the period of recovery and restoration may be decreased by weeks or even by months.

Electricity is used in several ways for as many indications. In the very

acute stages it should not be resorted to at all; but, when the excessive pain and hyperæsthesia have in a measure subsided, the use of very mild galvanic currents, uninterrupted, and passed through sponge or absorbent cotton electrodes of two to three inches in diameter, is sometimes beneficial even in the relief of the pain and inflammation. Experience should guide in this matter. If a patient is made worse by one or two mild applications, further treatment should not be given up entirely, but should be postponed for another week or two. This use of galvanism with weak currents and large electrodes is for anodyne purposes. The Adamkiewicz's electrode, for the application of such remedies as chloroform by means of electricity, is worthy of trial. After the active inflammation has largely or altogether subsided, electricity, either in the form of galvanism or faradism, will assist very much in the restoration of the degenerated nerves and muscles. If contractions can be produced by faradism, this form of electricity, which is usually the most convenient for application, may be employed; but if no response can be thus obtained, resort should be had to a slowly-interrupted galvanic current.











